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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,134	03/10/2004	Andrew Jay Skoog	041A.0009.U1(US)	4937

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EXAMINER	
SAVAGE, JASON L	
ART UNIT	**PAPER NUMBER**
1775	

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/798,134	SKOOG ET AL.	
	Examiner	Art Unit	
	Jason L. Savage	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) *15 and 16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20060818*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8, 10 and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Andrus et al (US 5,250,360).

Andrus teaches a method of forming protective coatings on turbine engine components (col. 1, ln. 4-28). Andrus further teaches the method of forming the coating is electrostatically spraying a dry powder coating material directly onto the component body surface and heating the applied coating to soften the coating by melting and subsequently fusing the particles to cure the coating (col. 6, ln. 27-47). In the alternative, it would have been obvious to have heated the coating to melt and fuse the particles in a single heating step.

Regarding claim 3, Andrus is silent to the powder being electrostatically charged by tribo-charging, however, it would have been within the purview of one of ordinary skill in the art at the time of the invention to have employed any conventional method of electrostatically charging the coating with a reasonable expectation of success. Absent a teaching of the criticality of showing of unexpected results from the use of the claimed charging methods, they would not provide a patentable distinction over the prior art.

Regarding claim 4, Andrus teaches that the turbine body is electrically grounded (col. 6, ln. 32-33). In the alternative, it would have been obvious to have grounded the substrate body.

Regarding claims 5-7, Andrus teaches that the coatings may contain the claimed materials (col. 5, ln. 62 – col. 6, ln. 26).

Regarding claim 8, the coating of Andrus meets the limitation of being a thermal barrier.

Regarding claim 10, Andrus teaches that the coating may be applied by an electrostatic spray process (col. 6, ln. 29-30).

Regarding claim 12, Andrus meets the claim limitations as set forth above.

Claims 9, 11 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrus (US 5,250,360).

Regarding claim 9, Andrus is silent to the component body being cleaned prior to the application of the coating. However, the claimed pre-coating cleaning is a conventional processing step. It would have been within the purview of one of ordinary

skill in the art at the time of the invention to have employed a cleaning step prior to the deposition of the coating to have insured the coating would form a suitable bond with the substrate body.

Regarding claim 11, although Andrus does not explicitly recite the substrate in the turbine component is non-metallic, it would have been within the purview of one of ordinary skill in the art at the time of the invention to have recognized that a wide variety of materials could be employed with a reasonable expectation of success including non-metallic substrates such as is claimed.

Regarding claims 13-14, Andrus is silent to the exact processing parameters used when subjecting the coated component to the heating step. However, it would have been within the purview of one of ordinary skill in the art to have selected a heating temperature and duration that would insure the powder material that is applied would be able to melt, fuse and subsequently form the cured coating layer as described by the prior art. Absent a teaching of the criticality or showing of unexpected results, the claimed heating temperature and time would not provide a patentable distinction over the prior art.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ring et al. (US 6,531,524) in view of Nesbitt (US 2004/0115477).

Ring teaches that is known to apply powder coatings directly onto substrates by electrostatic deposition wherein the particles are charged with a voltage or by the use of tribo-charging (col. 1, ln. 14-21). Ring further teaches that it is known to heat the

powder coatings to melt and fuse the particles to form a cured coating (col. 1, ln. 21-27). Ring also teaches that the coatings may be applied in dry form without organic solvents (col. 1, ln. 25-27). Ring is silent to the coatings being formed on turbine engine components.

Nesbitt teaches a method of electrostatically coating a gas turbine engine component such as a turbine fan blade with a powder coating wherein the coating is applied in dry form and produces a coating having enhanced uniformity and density in all areas despite the component to be coated having an odd or angular shape (par [0147]).

It would have been obvious to one of ordinary skill in the art at the time of the invention recognized that the method of coating substrates as taught by Ring could have been employed in coating a wide variety of substrates including turbine engine components such as is taught by Nesbitt. It is well settled that the test of obviousness is not whether the features of one reference can be bodily incorporated into the structure of another and proper inquiry should not be limited to the specific structure shown by the references, but should be into the concepts fairly contained therein, and the overriding question to be determined is whether those concepts would suggest to one of ordinary skill in the art the modifications called for by the claims, In re Van Beckum, 169 USPQ 47 (CCPA 1971), In re Bozek, 163 USPQ 545 (CCPA 1969); In re Richman, 165 USPQ 509 (CCPA 1970); In re Henley, 112 USPQ 56 (CCPA 1956); In re Sneed, 218 USPQ 385 (Fed. Cir. 1983).

In response to the issue whether the reference is nonanalagous art, it has been held that the determination that a reference is from a nonanalogous art is twofold. First, one decides if the reference is within the field of the inventor's endeavor. If it is not, one proceeds to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved, In re Wood, 202 USPQ 171, 174. In the instant case, both Ring and Nesbitt are generally drawn to powder coatings processes applied in dry form using a electrostatic deposition method.

Regarding claims 2-3, Ring teaches the powder is electrostatically charged such as by tribo-charging (col. 1, ln. 19-21).

Regarding claim 4, both Nesbitt and Ring teach that electrical grounding is employed and Ring explicitly recites that the grounding of the substrate component is employed (col. 1, ln. 15-17).

Regarding claims 5-7, Ring teaches that the coatings may contain the claimed materials (col. 6, ln. 30-57).

Regarding claim 8, since coating of Ring as modified by Nesbitt teaches that the powder coating contains the same materials as disclosed in claim 5 and further teaches that the coating is for a turbine component, it is the position of the Examiner that the coating would meet the limitation of being as much of a thermal barrier as that claimed by Applicant.

Regarding claim 9, Nesbitt teaches the substrate may be cleaned (par [0022]). As such, it would have been obvious to one of ordinary skill in the art to have cleaned the substrate prior employing the coating method of Ring.

Regarding claim 10, Ring teaches that the coating may be applied by an electrostatic spray process (col. 12, ln. 14-18).

Regarding claim 11, although the references do not explicitly recite the substrate in the turbine component is non-metallic, it would have been within the purview of one of ordinary skill in the art at the time of the invention to have recognized that a wide variety of materials could be employed with a reasonable expectation of success including non-metallic substrates such as is claimed.

Regarding claim 12, Ring in view of Nesbitt teaches the claim limitations as set forth above.

Regarding claims 13-14, Ring and Nesbitt are silent to the exact processing parameters used when subjecting the coated component to the heating step. However, it would have been within the purview of one of ordinary skill in the art to have selected a heating temperature and duration that would insure the powder material that is applied would be able to melt, fuse and subsequently form the cured coating layer as described by the prior art. Absent a teaching of the criticality or showing of unexpected results, the claimed heating temperature and time would not provide a patentable distinction over the prior art.

Response to Arguments

Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection listed above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Savage whose telephone number is 571-272-1542. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason Savage
10-30-06

JENNIFER MCNEIL
SUPERVISORY PATENT EXAMINER
10/30/06